



ON THE
EXTERMINATION OR ANNIHILATION
OF THE
ASIATIC CHOLERA.

TO THE
RIGHT HON. VISCOUNT MELBOURNE,
Secretary for the Home Department, &c.

MY LORD,

A WHOLE year has elapsed since the Cholera entered Britain, and it still proceeds, quitting one place and attacking another; nor from any thing hitherto done, have we reason yet to hope, that its malignity will be diminished, its course resisted, or its duration terminated. We are now sensible, that the Cholera respects nor age, nor sex, nor rank, nor power. The suffering of its ravages once, is no security against its return: since the year 1817 it has visited Calcutta, I believe, twelve times. Commerce interrupted, general impoverishment, the treasury exhausted, the lower orders starving, costly Boards of Health, and thousands perishing, form the picture of our state.

Man is an indolent creature, and would rather endure a great deal than deviate from his wonted habits. This natural apathy, assisted perhaps by a little self-sufficiency, will account for attachment to antiquated systems. But, after a plan has been acted on over the greater part of the civilized world for fifteen years, attended only with wide-spreading mortality, it is surely time to pause, and consider, whether some change might

not be made for the better. It will be admitted, I think, that the end here proposed is of such importance, that the attempt ought to be encouraged, did its attainment even seem possible. If you concur, and are unprejudiced, candid, and benevolent, read on attentively, and judge for yourself.

That we may be guided by a fixed principle, take this proposition: That endemic and epidemic diseases, whether contagious or not, depend chiefly on *the state* of the atmosphere for their mildness or malignity, and for the facility and extent of their propagation; and further, that *this state* being changed, they undergo a corresponding change, or disappear.

Let us begin with that part of our proposition which respects contagion. A simple reference to the histories of small-pox, measles, scarlet fever, or any other fever held to be unquestionably contagious, is all that is requisite to convince you, that such maladies correspond with the atmospheric constitution, whether they are characteristically mild or malignant, whether they spread slowly or rapidly, whether they remain within a determinate enclosure, or involve nations in succession.

The second part of our argument, concerning endemic diseases, though it cannot be so compendiously settled, will, we trust, afford equal satisfaction.

Every locality displays the power which it possesses over the living structures and functions of plants and animals: health at one time seeks the city, and another the fields; at one time the land, at another the sea: there is not an open street, or a narrow lane; not an elevated ground, or extended plain; there is no variety of position, situation, or circumstance, which does not modify the phenomena, and not one which is not more or less under the dominion of human ingenuity.

Every year, every portion of the year, has its peculiar temperament and ruling influences, which co-operate with, or repress the disposition of every spot on the surface of

our earth, in relation to the health of its inhabitants. The whole history, in effect, of endemic diseases teaches, that they are generated from local causes, and that these causes are almost inert without the aid of certain seasons, or certain states of the weather ; hence it is, that intermittent fevers, for example, prevail at particular seasons ; but in each, they are mild or malignant, according to the reigning constitution of the atmosphere.

Is it not evident, that fevers remotely induced from a marshy soil, or that any other endemic disorders caused by effluvia acting in conjunction with the external air, are neither to be confined, nor overcome, by any means, however good or wise, employed within secluded apartments ? Such means can have but little control over a subtile fluid, which enters by every aperture, and is inhaled with every breath ! Besides, though they may do good to my neighbour who is sick, they cannot defend me who am well ; to put me in safety, you must purify that which I respire, and in which I must perform all the offices of a living being.

The ancients suffered from these evils, detected their causes, and discovered the remedies. In order to avert agues, putrid fevers, and other diseases originating in local contingencies, they improved their cities and dwellings, felled forests, drained marshes, supplied valleys with lakes and running streams ; in fine, they destroyed the source, or, in other words, they rendered portions of the air salubrious. Does this not prove that a contaminated portion can be corrected ? Does it not lead us naturally to expect, that if one kind of effluvia vitiate the air partially, another kind may be found to correct that vitiation ? We request these observations to be kept in mind, while you peruse the next, which is the most important division, of this essay.

Certain distempers received the epithet *epidemic*, from their being referred to a cause, so diffusive, that it did not affect individuals merely, but the million ; and no medium seemed commensurate, except the common air, the sovereignty

of which is maintained by all the writers on epidemic diseases ; even those on the plague and yellow fever, in which the existence of contagion is warmly disputed, confirm the doctrine by well-accredited statements. They inform us, that in Egypt, Italy, &c., the plague has instantly abated or disappeared upon the falling of a heavy rain, or the sudden supervention of heat or cold ; and to persons not medical, the thought has often incidentally occurred, that a similar alteration might be effected by artificial means. Hume, vol. vii., p. 416, speaking of the great fire in London, says : “ The plague, which used to break out with great fury twice or thrice every century, indeed was always lurking in some corner or other of the city, has scarcely ever appeared since that calamity.”

It was a maxim with the Peripatetic philosophers, “ That the air is the universal cause, modified in its effects by subordinate causes ;” nor, as we learn from the eradication of the endemic diseases, is the conception modern, that the air, corrupted by physical agents, may be divested of its deleterious qualities by agents of the same class ; but if any one contends that a limited insalubrity can supply no argument applicable to an unbounded noxiousness, I answer, that the air encircling our globe never either was, or was ever imagined to be, totally and simultaneously in such a predicament ; the endemic and epidemic poisons coincide in having each a topical origin ; the most sensible difference between them is, that the one is stationary and the other migratory. The epidemiferous air leaves the attacked places sound, at least for a time ; so that at every stage of its journey it assumes the circumscribed character of an endemic ; therefore whatever removes this intemperies, at any one stage, will afford the best chance of its interception ; and were the same means employed, wherever it has been, is, or shall be, there could be no doubt of its complete extinction.

With these truths, likewise, the ancients were thoroughly acquainted, and we shall see that they made the proper application of them.

Hippocrates, in his cases, narrates succinctly the situation and circumstances of the place and house in which each patient lived; he notes also the season and the prevalent maladies, never neglecting the atmosphere, of which he well knew the supremacy. He gave warning of the approach of epidemics; and when a plague from Ethiopia, remarkable in history for the devastation which attended its progress, had taken possession of the Grecian territories, he by immense conflagrations delivered his country.

But this great man had his adversaries; what he proposed, they condemned! No medical fraternity lent him aid; he had what was infinitely better, the support of his independent, discerning, and energetic countrymen; they did not choose to be swept from the land of the living, rather than adopt the measures devised for their preservation!

More ancient still than the times of the father of Grecian medicine; Acron of Agrigentum gained great glory by kindling fires to expel a plague which ravaged Athens; sulphureous purifying is described by Homer; and, going farther, we find the merit of fumigations transferred to the Egyptian priesthood.

The facts above detailed prove, that the idea of a necessary connexion between certain diseases, and certain states of the air, and of their being removable by art, is of a date equally remote with the history of the human race; and, considering the deeply-rooted impression, it is astonishing how little advancement was made in this very interesting branch of physics. The atmosphere seems to have been forgotten, or the attempts to purify it remembered only as one of the curiosities of literature. *Contagion became the terror of men*, and, except for the chambers of the affected, the means of protection were scarcely ever dreamed of; these consisted of the burning of resinous woods and a confusion of aromatics, to which, in latter times, were added, cinnabar, arsenic, and explosions of gunpowder.

It does not appear that any improvement was thought of till the year 1758, when Dr James Johnstone, of Worcester, published a treatise, entitled “ An Historical Dissertation on the Malignant and Epidemical Fever which prevailed at Kidderminster in 1756,” in which he proposed the employment of muriatic acid for the purification of vitiated air ; but it was M. Guyton Morveau, who, nineteen years afterwards, “ established its efficacy by a variety of well-conducted and decisive experiments.” In the year 1773, the Cathedral of Dijon was infected to such a degree by exhalations from the vaults, that it became necessary to shut it up ; and towards the end of the same year a putrid fever burst forth in the jails of Dijon. In the cathedral and the jails, M. Guyton Morveau happily practised the muriatic acid fumigation, and afterwards France was relieved, by the same means, from a terror greater than that inspired by the arms of Europe combined against her.

Immediately after this decisive result, his method was adopted by individuals in divers countries, with equal success. In the second year of the Republic, 1794, a malignant fever prevailed in France ; in consequence of which the Convention decreed, “ That detailed instructions respecting the mechanical and chemical means of preventing the progress of infection, and of purifying the air, should be printed and sent to the military, naval, and civil hospitals ;” and, seemingly aware that the intention might be frustrated by the intrigues of envy, Guyton Morveau was “ charged with the superintendence of this matter.”

In 1800, the yellow fever committed dreadful havoc in Andalusia. The Spanish government sent two physicians to practise the new method vigorously. The official report soon returned, stating, “ It is to the acid fumigations we owe the extinction of a malady which threatened to throw the whole nation into mourning.”

While acid fumigation was spreading over the continent, it

could not fail to attract attention in Britain. In the year 1780, a putrid fever, called the jail distemper, appeared amongst the Spanish prisoners at Winchester. Dr James Carmichael Smith, physician of the Middlesex hospital, repaired thither at the request of the commissioners of the sick and wounded ; and, by means of acid fumigation, he had such success, that the House of Commons resolved, *nem. con.*, “ That an humble address be presented to his Majesty, that he will be graciously pleased to take the merits of the said Dr James Carmichael Smith into his royal consideration, and to confer upon him such mark of his Majesty’s favour as his Majesty in his royal goodness may think fit.”

In the year 1795, a most pernicious fever threatened the British navy, and the Russian squadron then lying at Sheerness ; Earl Spencer, with the concurrence of the rest of the Lords Commissioners of the Admiralty, ordered, that the plan proposed by Dr C. Smith, of fumigating with nitric acid gas, should be put into practice forthwith. The trial was made first in his Majesty’s hospital-ship, *Union*, and subsequently in all the infected British and Russian ships of war ; success surpassed expectation. It were superfluous here, however, to detail the various trials made in prisons, hospitals, and ships,—it is enough for us, that they all had the most happy results : we shall content ourselves with the notice of one conducted by Sir James M’Grigor, to whose exertions the army and the nation are much indebted. When at Jersey with the 88th Regiment, in 1797, a low typhus fever had broken out, and he determined to give the nitric fumigation a fair trial. After detailing the process, &c. he proceeds, “ The effect of the nitrous fumigations is evident, *not only in the diminished number of cases, but also in their degree of virulence.* The cases that have of late appeared have *been gradually becoming milder*, and are now what a late writer would call cases of simple fever, *having neither petechiæ nor any dangerous symptom.*”

To do good is a most arduous enterprise. In the year 1800, a pestilential fever desolated Genoa, and the yellow fever Cadiz. Morveau exerted himself, in vain, to introduce his plan; the population of these cities suffered severely; but Andalusia was saved,—not with the consent of the medical practitioners,—they hate innovation, it disturbs their tranquillity; but by the command of the Spanish government. When the yellow fever broke out in the Peninsula, apprehensions were entertained, that it would thence diffuse itself in every direction; and it is more than probable, that our hemisphere was rescued from this dreadful invasion solely by the acid fumigation.

I do not recollect, in the whole history of medicine, one solitary instance of any united party or body of medical men passing beyond the precincts of blind routine. Jealousy paralyzed their minds, or shut up the avenues of their understanding; so that any new means of alleviating or averting human misery, seemed to them more terrible than famine and pestilence, with all their concomitant horrors!

Be these reflections well founded or not, this I predict, that unless the government interpose its fiat, or the people consult for themselves, we must continue, as we shall well deserve to be, the apprehensive spectators of woeful depopulation, or the passive victims of the inexorable Cholera.

It may be said, that the government appointed persons invested with proper authority; but, I ask, if a fleet were sent upon an expedition which proved a total failure, would no inquiry be made?

Let us now review the proceedings of our Boards.

To recommend and enforce cleanliness, and provide for the necessitous, was most praiseworthy; this is just what has ever been attended to on such emergencies: it was most munificently done in the years 1665 and 1666; but it neither stayed the plague, nor assuaged its fury.

If we examine the directions given for the treatment of the Cholera, we find a congeries of rules, drugs, and practices, a

transcript of those originally advised in the plague, a little modified by modern pharmacy and chemistry.

The same precautionary measures, the same injunctions, prescriptions, and profusion of chlorides, that have been chosen here, together with the burning of clothes and furniture, had been put into operation throughout the Russian empire, with all the rigorous punctuality of the autocracy, still the foe marched on unimpeded. Our medical dictators, however, did not relinquish a system which had proved unavailing, and, in many respects, worse than useless ! Is it not unaccountable, even upon their own contagious fancy, that they trusted to lime and chlorides, which, whatever may be their virtues on other occasions, had every where proved ineffectual against the present calamity ? while facts, which every one of them should know, demonstrated, that the mineral acids were the only agents which ever had overcome putrid, pestilential, and epidemic, fevers !

It is not necessary for a physician to be of an inventive genius, endowed with the faculty of producing original ideas ; but if his attainments are not on a level with those of the age in which he lives, if other pursuits have made him neglect that information which his public duty requires, he certainly is no ornament to the profession, no benefactor of mankind.

From the transactions of our committees of public safety, it might be believed, that the labours of Morveau, Smith, and others, and the benefits of their ardent perseverance, had neither made any impression upon their contemporaries, nor left any trace to their successors : it is not so ; many practitioners, whenever occasion offered during the last thirty years, have availed themselves of the knowledge with which our art was then enriched ; but those men, who treasure up every fact of utility, more anxious to deserve than to seem deserving, cannot descend to that low ground where lies the short, and perhaps the only broad way to the favour of those who have at their disposal the countenance of fools, and the gifts of fortune.

Dr Sanders, during his professional career, never lost any opportunity of using fumigations, with such of the acids as he judged most suitable to the particular case; and while he taught the practice of medicine, he never forgot to instruct his pupils when and how they ought to be administered. In connexion with his continued observation of the efficiency of these agents, he was in the habit of reflecting on the relations which subsisted between the atmosphere and epidemic diseases, and had long entertained the opinion, that, should our country be invaded by any pestilential disease, the effecting of a change in the surrounding air would furnish our only sure weapons, offensive and defensive, and speedily reward us with victory. The principle seemed to him so rational and obvious, that it had just to be mentioned to ensure its being acted upon.

Accordingly, in a letter on the subject of Cholera, of date 16th November 1831, addressed to Sir Henry Hallford, M. D., President of the Central Board of Health, he introduced the topic of purifying the air, and he expressed a wish that measures should be taken to accomplish this purpose.

“ Whether the cases said to have recently appeared in Sunderland, Newcastle, and London, are, or are not, of the Asiatic description, a visitation may be apprehended in contempt of all guards, quarantines, and *sanatory cordons*, the relics of barbarism; but if *a melioration could be effected in the constitution of the atmosphere*, this would be at once *a universal preventive and remedy*. Taking a hint from antiquity, might we not have *fires* on our hills, and *discharges of artillery* throughout the land?”*

Copies of this letter were sent to Drs Russell and Barry; but their *views* were not *aërial*. The return made to the Doctor, though not avowed, was very flattering. Drs Russell and Barry presented a Report, which was published by the Board on the 13th of December last, containing, almost *verbatim*, the pathological part of his letter. Now,

* New North Briton, 16th November 1831.

that man who appropriates to himself your ideas, sets the highest value upon them ; he prefers your reputation, and pays you the greatest possible compliment, nevertheless, as Dr Abercromby knows, such compliments are not rare.

The object of Dr Sanders was, that the invader should be expelled by a *coup de main* ; but such was not the will of the Board. This attempt having failed, he thought, that those concerned—and who was not concerned?—would unite with him to destroy the enemy's forces in detail ; wherefore, in the beginning of January last, when the first well-ascertained case of Cholera occurred in this city, he wrote to the Lord Provost :

January 5, 1832.

“ MY LORD,—In medicine, it is not words, but deeds, that save the lives of men ; it is now time to act. The case of Leech, which occurred yesterday, is of a decisive character ; it is an unequivocal example of *the Spasmodic Cholera*. By the prompt measures taken, the patient is in a favourable way ; but there would have been little or no danger, had assistance been called during *the first stage*. Every apartment in that house, No 4, West Adam Street, ought to be instantly fumigated, and the floors sprinkled with the solution of the chloride of lime or soda. *I would advise also to raise the fumes of muriatic or oxymuriatic acid (chlorine), throughout the open street, which would add much to the protection of the neighbourhood, nay, even of the whole city.*” &c.*

The only answer made him was vituperative paragraphs in several journals. After this second repulse, he resolved on doing all he could within his own sphere. Since that time not a few experiments have been made, and with the most complete success. In no instance, where the chlorine gas was used,

* Edinburgh Observer, January 6, 1832.

has the disease attacked any one in the same family, in the same tenement, or even in the same range of buildings; in fine, wherever the chlorine has been assiduously extricated within and without the dwellings of the patients, the disease went no further; and wherever, in the open air, near any uninfected house, that house enjoyed perfect security.

“ In February last, chlorine was diffused in the air of Fisherrow for eight days successively, during which the Cholera was arrested, became milder, and finally disappeared; nor have we since heard of even one case there. By the same means the Cholera was in one or two days completely stopped at Portobello; and notwithstanding its vicinity to, and continual intercourse with Edinburgh, the population of that fine village seems to have been preserved by the occasional repetition of these fumigations.”

Acid fumigations of various kinds have been employed, and all of them have been beneficial; but those most approved, are the chlorine, the muriatic acid, and the nitric acid. The chlorine is best adapted for streets, lanes, and confined places; the muriatic acid, for open spaces; and the nitric acid for apartments in which there are putrid fevers and ulcerations; nor should we omit vinegar, which serves every purpose on ordinary occasions.

In the Cholera, however, we must rely principally upon the chlorine and muriatic acid.* *

To sum up—

It would be difficult, I believe, to produce, within the whole compass of those observations upon which medical practice is founded, a more complete combination of facts bearing upon one point. I deny, that there is any article in the *materia medica*, any prescription, or even after grave consultation, any decision given, better sustained than the acid fumigations.

Is it not established upon the solid foundation of experience and experiment?

I. That endemic and epidemic diseases, whether contagious or not, are changed, or disappear, when the state of the atmosphere is changed or corrected.

II. That such epidemics, as the yellow fever, the putrid fever, and the Cholera, have been, may be again, and consequently, upon every recurrence, ought to be promptly exterminated.

III. That the acid fumigations are the means, and as yet the only well-ascertained means, by which this end can be attained.

I have here laid before you, with the facts and arguments by which it is supported, *that plan which, carried into vigorous execution, would, in my humble judgment, free us from the Asiatic Cholera.* Had it been adopted when suggested twelve months ago, that scourge of our race would scarcely have been felt in the British Islands. How much injury to our commerce, how much loss of capital, how much distress, would have been prevented ! How many thousands, who are now widows and orphans, and a melancholy burden upon the overburdened community, would have still had their natural protectors !

Though brought forward by one who had nothing save advice to offer, it is extremely to be lamented that this subject did not obtain due consideration ; but it was little to be expected, seeing

“ The fashion of these times,
Where none will sweat, but for promotion.”

Concluding, I feign no apology, convinced indeed, as I am, that an overwhelming evil might be annihilated, silence on my part were unpardonable. It will be with this as with the other afflictions superinduced upon the ordinary lot of

humanity; let the cause be removed and the effect will cease, just as darkness vanishes before the rising sun.

I have the honour to be,

MY LORD,

Yours most respectfully,

EUPHEMIZON.

Edinburgh, October 1832.

* * * Directions for conducting the acid fumigations, with a view to the extinction of the Cholera :—

FORMULA I.—FOR EXTRACTING THE CHLORINE GAS.—Four parts by weight, or eight parts by measure, common sea salt; one part deutoxyde of manganese, called in the shops manganese—mix these together with a stick or staff; add water to moisten the mixture thoroughly; then pour in strong sulphuric acid, commonly called oil of vitriol, and stir the mass with the staff. The steams will instantly fly up, and in like manner, from time to time, let the acid be added till the fuming shall have ceased, and let water also be added, if the mixture have become too consistent.

A common herring barrel, sawed through the middle, will make two excellent tubs; put the materials into them, and proceed as above directed; place one in each narrow lane or close, and let the inhabitants open their windows. In houses where the disease is, a common porter tumbler will do very well, and if the smell be distinctly perceived, that is enough to be kept up.

For each street, let one or more tubs, containing the salt and manganese mixed, be put upon a cart, along with a jar full of the oil of vitriol, and a man with a rod in his hand, and his back to the wind, and while he is pouring in the acid, and the steams are rising, let the cart move slowly along, just as carts do when streets are watered, *and at a cheaper rate than streets are watered will cities be saved.*

FORMULA II.—FOR EXTRACTING MURIATIC ACID GAS.—Put common sea salt into any wooden or earthenware vessel, moisten the salt with water, and pour in the sulphuric acid, or oil of vitriol, and stir as long as the fumes are disengaged.

The above should be done in half hogsheads, or very large vessels, to be placed east, west, south, and north of cities, towns, and villages. If, indeed, one such vessel were kept with the fumes rising at each end of any village, the Cholera would never enter it. *This would have such an effect as never was attained by armed bands, sanitary cordons, and quarantine laws, with all their expensive appendage of hirelings.*

The process should be persevered in for 8, 10, or 14 days successively, according to the obstinacy or severity of the epidemic.

